

## REMARKS

It appears that in this case there are literally dozens of unresolved issues in dispute. Most of these, particularly those in the Applicant's most recently filed Response, are essentially unaddressed by the current (August 24) Official Action.

More specifically, Applicant has tendered amendments and facts that negate the rejections of record. The Action at page 57 (hereinafter styled "OA 57") replies only that the Applicant's submission was "read . . . and found . . . unpersuasive."

With greatest respect, the undersigned believes that a substantive analysis, going beyond previously-overcome arguments of earlier Official Actions, is obligatory. 35 USC § 132(a).

For the Examiner's convenience, and in the interest of advancing this application toward allowance, the Applicant summarizes here the most important of these issues:

A. Hardware — None of the currently cited art satisfies the claim-1 recitation "a hardware network of components having substantially no software".

The claims implicated by this point are claims 1 through 12.

Applicant's previous discussions of this point show factually that Best's cited circuit is operated by associated software. See the May 15, 2006 amendment in the section bridging pages 34 and 35 (hereinafter styled "May ammt. 34-35"), and the declaration of Jean-Claude LaPrie at page 6, paragraph 24 (hereinafter "LaPrie 6 ¶ 24").

In the August 24 Official Action at pages 5 and 57 (hereinafter "OA 5, 57"), the Applicant's factual observations are disregarded.

**B. "Generic" infrastructure, capable of protecting virtually any computing system — No cited art satisfies this limitation.**

More specifically the limitation is essentially: any such system "that can issue an error message and handle a recovery command".

The claims implicated by this point are claims 3, 23, 35, 46, 69, 74 and 78 — and in addition claims 55 through 59, and claim 79, although in these latter six claims the word "generic" does not appear.

Applicant's previous discussions of this point appear at *May ammt.* 57, section "(3)"; and *LaPrie* 7-8 ¶¶ 27-28. They point out that the control software of Best, far from being generic, was entirely custom written to run his hardware; and that in the DEDIX (described in the Avizienis paper), application programs had to be written specifically with "cross-check" points.

The Official Action simply tries to sidestep this entire limitation, merely asserting that the Avizienis paper:

"discloses how Avizienis handles processor faults, while Best simply handles any fault coming down the communication channel."

The Official Action thus ignores the fact that in Avizienis, whatever faults the DEDIX "handled" were all determined by its custom character.

With respect, the Action also confuses errors handled by a computing system with errors generated by a computing system. Possibly it is true, though apparently irrelevant, that Best's apparatus handles any fault in that channel; but that is not the issue.

The claim is not about that specific narrow class of communication faults which the system was fabricated to manage. Rather, the claim language goes explicitly to errors arising in the software itself, and resulting errors by the system hardware. The claim is about what happens when that software and system fail, not when they work.

**C. Infrastructure guards against failure of an entire computing system — No cited art satisfies this limitation.**

The claims implicated by this point are claims 13 through 24, 34, 42 through 51, 58, 62 through 64, 68, 70, 71, 73, 74, and 76 through 78.

Applicant's previous discussions of this point appear at *May ammt.* 41-42 (section titled "CLAIMS 13 THROUGH 17, AND 19 THROUGH 21"); and *LaPrie* 11 ¶¶ 44-46. It is there pointed out that Best neither shows nor states such function or purpose. Contrariwise, his invention is expressly for "management, comparison, and correction of redundant digital data". What happens to Best's data

after it passes beyond e. g. his "host processor data bus" into the rest of his computing system is no concern of Best or his invention.

In the Official Action it is nevertheless said that Best's patent guards against failure of an entire computing system. This assertion is unsupported. Best himself characterizes his invention thus: "The present invention is a system for controlling and managing redundant inter-processor communication channels." Such channels are much less than "an entire computing system".

**D. Not a circuit breaker — The invention is inherently not a circuit breaker, and this negative limitation is proper.**

The claim implicated by this point is claim 79.

Applicant's previous discussions of this point appear at *May ammt.* 27, 28, 40, 41. As pointed out there, the topic of a circuit breaker was placed on the record by the Examiner and therefore is fair subject matter for a negative limitation — exactly as if a common circuit breaker had been cited in a written Official Action; furthermore the invention is inherently and plainly not a circuit breaker, and the Applicant clearly knew this at the outset.

In the Official Action it is theorized that the claim fails the "written description requirement" (OA 2-3) because:

- the spec never says the invention is or isn't a circuit breaker; and
- the idea came up in a phone conversation and "was not held by Applicant at the time of filing."

Applicant demurs.

With greatest respect, in the situation outlined here these statements in the Action are irrelevant, and the Applicant is entitled to direct a claim to the negation of the Examiner's expressed concern about a circuit breaker. More specifically as to the theory espoused in the Official Action, the claim actually satisfies the "written description requirement", specifically because careful study of the entire written spec makes absolutely clear that the invention is not a circuit breaker.

**E. "Substantially" — This term is now used only conventionally, in the claims, and in a way that the Examiner originally indicated would be unobjectionable.**

The claims implicated by this point are claims 2, 3, 7, 12, 19, 24, 27, 41, 54, 61, and 64 through 69.

The term "substantially" even appears in a caselaw excerpt in MPEP 716.02(a) III. There the claim phrase "substantially entirely", quoted with evident approval, bears distinct resemblance to the phrase "substantially exclusively" used herein. Indeed, the MPEP itself makes frequent and generous use of the term "substantially", as for example in § 706.03(a)(1), in the quotation from *Ex Parte Grayson*.

Applicant's recent discussions of this point appear at *May Ammt.* 28-29. As there pointed out, the current Official Action rejects claim wording which is not present in the claims.

The Applicant respectfully objects to this irregularity. The occurrence of the word "substantially" which the Examiner deemed unacceptable had been removed prior to the current Official Action.

Furthermore, in a phone interview the Examiner expressly indicated that the other occurrence of the word "substantially" was not as serious a concern. In the current Action, however, the rejection appears unchanged from the preceding Action (i. e., before Applicant deleted the unacceptable usage).

Specifically, the Action quotes the claims as "substantially exclusively made up of substantially commercial, off-the-shelf components". This is not the language of the subject claims.

Nevertheless in the Official Action it is reiterated that "the claims themselves must be clear." Hence the Action fails to recognize the claim revisions that were made in direct response to the Examiner's previous statements of his concerns.

The record shows that the Examiner consistently and strenuously rejected claims that recited "substantially COTS". The rejections were all on the ground that the concept of "COTS" was itself so poorly defined that the idea of being only "substantially" COTS was doubly indefinite: an indefinite blurring of an already-indefinite concept. Although the Applicant disagreed with that position, he changed the language as a matter of compromise.

The concept "exclusively" is not subject to objection as poorly defined. That is a very definite word.

Hence the phrase "substantially exclusively" is as clear as any phrase containing the word "substantially" can ever be. The word "substantially", in turn, is an entirely standard patent-claim term, approved in not only the MPEP but also innumerable Court and Board decisions.

As pointed out in earlier Amendments and phone conversation, the point of this term "substantially" in the Applicant's claims is to block cynical competitors from willful appropriation of a patentee's rights by merely making a relatively small change in some relatively inconsequential detail. These

statements on the record provide "a standard for ascertaining the requisite degree," so that a person of ordinary skill is "reasonably apprised of the scope of the invention."

Applicant submits that the language of these claims is now clear and proper. Moreover this language promotes the Constitutionally mandated purposes of the Patent Statute.

F. "Such" — This term is used in a specific, distinct way that benefits the patent system, and that has been accepted by the Patent & Trademark Office. The resulting recitations clearly make the dependent claims "further limit" the subject matter, relative to the independent claims.

All of the claims are implicated by this point.

THE USE OF "SUCH" IN GENERAL — After reading and hearing the objectives of this use of "such", outside the present prosecution, the Board of Appeals has approved this language in claims brought up on appeal by the undersigned. Many Examiners, too, have accepted this convention.

One reason for this acceptance: this usage advances the statutory exhortation to plainly point out and distinctly claim. Specifically, most claim-drafting leaves it very ambiguous whether a particular element is part of the invention, or merely part of context or environment of the invention. The present usage of "such" — as fully detailed on the record in this case — instead makes absolutely clear which is which.

A second reason for acceptance: the Applicant is entitled to be his own lexicographer. According to the caselaw, this is true even if the meaning of a term is different from or opposite to a conventional meaning.

Applicant's earlier discussions of this point appear at *May Ammt.* 30-33. No substantive reason has been offered for refusal to accept this usage. Indeed, portions of the current Action now appear to accept it (OA 4).

CLARITY IN "FURTHER LIMITING", BASED ON THE SPECIAL USE OF "SUCH" — The present claims make very beneficial use of that capability to clarify which is context and which is invention. In particular, clearly the claims criticized in the Action as failing to "further limit" are actually limiting very strongly. Those are claims 4, 16, 36, 47, 59, 63, 66 and 82.

The current Official Action repeats a previous rejection for purported "failure to further limit". That rejection was made on the theory that there

was a "redundant limitation" in the claims, but the Action appeared to acquiesce in the use of the term "such". Therefore the Applicant accepted that theory — and correspondingly amended the independent claims involved, and some of the dependent claims.

Although the Applicant felt that this theory rather carried semantics somewhat to a fault, it was accepted as reasonably consistent with the use of "such" in the other claims. The Applicant was of course anxious to oblige the Examiner in what appeared to be the Examiner's own preferred usage.

Now the current Action overlooks the fact that the claims are already amended pursuant to the "redundant limitation" theory in the preceding Action. The current Action still objects to the phrase "failure of a computer system".

The Action does so even though, in accordance with the previously introduced theory, the term "failure" itself is also now prefaced (in the claim bodies) with "such". This usage emphasizes that neither the computer system nor its failure is an element of the invention. Both are elements of context.

As the claims now make expressly clear that there is no redundancy, Applicant submits once again that the dependent claims indeed further limit the subject matter of the independent claims. Specifically, the computer system and its failure are not elements of the invention in the independent claims — but the system is an element of the invention in the dependent claims that expressly say it is.

G. Infrastructure can't and doesn't run applications — No cited art satisfies this limitation.

The claims implicated by this point are at least claims 6, 38, 45, 48, 57, 67, 70, 71, 76, and 81 through 83.

Best teaches at his column 6, line 29 through 31, that his computers can do avionics calculations — and "flight control systems, [such] as fly-by-wire and nap-of-the-earth guidance system". These are applications programs.

This certainly should not be surprising. When computers are used to exchange messages with one another, it is likely that the computers are doing something else "about which" it may be desirable to send messages. That "something else" is most likely to be computations by applications programs.

In the Official Action it appears to be suggested that there is no host computer capable of running any application program. The rationale for this suggestion is evidently that (OA 10, ¶ 70): "Best does not disclose any host computer programs as avoided by the claims . . . no application programs are disclosed".

As now seen above, this assertion is factually in error. Best says expressly that software in an associated host runs his communication circuitry, and avionics applications are a likely parallel activity.

H. Diverse design or origin — this limitation is not the same thing as "generated at a diverse origin" (as proposed in the Official Action).

The claims implicated by this point are at least 9, 21, 37, and 43.

Applicant's earlier discussions of this point appear at *May ammt.* 38-40, making the factual point that the two prepositions "of" and "at" convey drastically different concepts:

- "of" means that the physical channel equipments come from different designers or manufacturers, or both;
- "at" means merely that the signal-processing channels are connected to different computers, as Best says and the Action confirms.

The current Official Action disregards this distinction, and undertakes to show that Best satisfies the language of these claims. In the Action it is said that (emphasis added):

"the parallel channels of [Best's] computing system are of diverse design or origin (column 3, [line] 5: the channels are attached to different computers and thus are generated at a diverse origin)."

The current Action thus repeats a proposed theory of anticipation, which was already obviated by the Applicant's factual points filed in the interim. With great respect, the Applicant is unable to understand how mere repetition of the previously stated and already factually-overcome grounds of rejection, OA 7 ¶ 9, coupled with a generalized and unsupported statement of nonpersuasiveness, OA 57, satisfies the Commissioner's obligation to provide objective reasons for rejection. Clarification is requested.

I. Combinability of references — While the two cited prior-art documents coexisted for ten years before Dr. Avizienis filed his provisional patent application, their combination was never proposed by others. Also, the two documents are believed to be incompatible technologies — with no true motivation for combining.

The claims implicated by this point are all the claims rejected under § 103, namely: claims 2, 3, 9, 10, 12, 18, 21 through 24, 33 through 38, 41, 43, 46, 49, 50, 51, 52, 55 through 61, and 64 through 69.

Applicant's earlier discussions of this point appear at May *ammt.* 45-49, showing that:

- if combination of the two references were actually as obvious as suggested by the Official Action, then by at least mid2000 their combination would have been invented by others (May *ammt.* 45-46);
- there has been strong need, all that time (May *ammt.* 46-47);
- such reasoning has been approved by the High Courts (May *ammt.* 47);
- there is great peer admiration for the invention (May *ammt.* 47-48; LaPrie 3 ¶ 11);
- for certain claims, neither reference "even satisfies . . . the underlying independent claim" (LaPrie 6 ¶ 24, and e. g. 11 ¶¶ 43-50); and
- the two references respectively describe technologies that don't readily work together, and that skilled artisans in the field do not regard as "going together" (LaPrie 16, ¶ 68) — and whose combination would offer no particular benefit, and therefore actually is not motivated (May *ammt.* 48-49; LaPrie 8-9 ¶¶ 30-36 and 9-10 ¶¶ 38-40).

The current Official Action disregards all these known facts, merely reiterating almost all the rejections from the preceding Action — and responding only with the unsupported comment that they are not persuasive (OA 57).

Applicant has abbreviated the foregoing notes for the Examiner's convenience, to enable coverage of all the most-important issues succinctly. The Applicant respectfully wishes to reserve the right to rely upon other reasoning articulated in previous papers, though not repeated here.

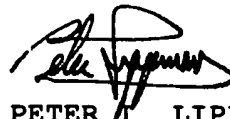
### Conclusion

In view of the attached Declaration and the foregoing remarks, the Applicant respectfully requests reconsideration and



allowance of all claims now standing in this case. In addition, noting the extremely high cost of continuing prosecution of this application — not only to the Applicant but to the Government as well — it is earnestly requested that, should there appear any obstacle to allowance of the claims herein, the Examiner telephone the undersigned attorney to try to resolve the obstacle.

Respectfully submitted,



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